

# Enterprise DBA Task Request Standard Operating Procedure

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## Table of Contents

1. Overview .....	4
2. DBA Request Process Flow .....	4
3. Process Requirements .....	4
4. Process Steps .....	5
4.1. User Requires Support .....	5
4.2. User Submits Request for Support.....	5
4.2.1. Development Support: User Creates CMS .....	5
4.2.1.1. Data Model Development.....	5
4.2.1.2. Database Code Development .....	6
4.2.1.3. Control Table Data Changes.....	7
4.2.1.4. Grant and Synonym Requests .....	8
4.2.2. Non-Development/Data Support: User Creates ENTDBA JIRA Ticket.....	8
4.2.2.1. Supporting files.....	9
4.2.2.2. Recurring Activities.....	9
4.2.2.3. Production Deletes .....	9
4.2.2.4. Large Non-Development Production Sweeps.....	9
4.3. DBA Group Assigns a DBA .....	10
4.3.1. Tickets that should immediately be closed by the ENTDBA Gatekeeper.....	10
4.3.2. Tickets that require special consideration.....	11
4.4. DBA Performs Work.....	11
4.4.1. DBA Availability .....	12
4.4.2. Designated response times for CMS requests.....	12
4.4.3. Designated response times for JIRA tickets.....	12
4.5. Resolve and Close Ticket.....	13
5. Review .....	13
APPENDIX A: Vetting and assignment of Run IDs to Data Analysts .....	14
APPENDIX B: DBA Support Categories.....	15
APPENDIX C: ENTDBA JIRA Ticket Template.....	17
APPENDIX D: Types of SQL Statements .....	18
APPENDIX E: Application DBA vs. System DBA.....	19



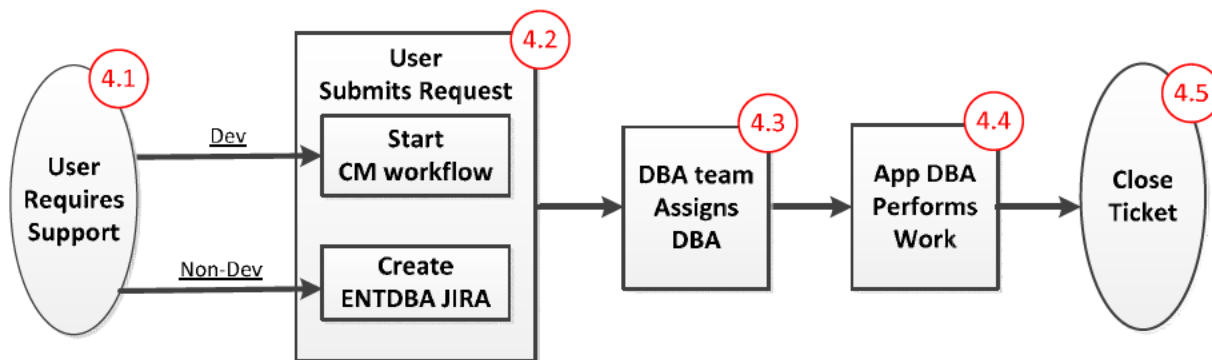
## 1. Overview

All work performed by the Enterprise DBA team requires an Enterprise DBA (ENTDBA) JIRA ticket to account for time and effort spent on user requests. Development work and deployment will be managed through the CMS process, and the Enterprise DBA group will supplement that with the ENTDBA project to manage work assignment amongst the app DBA group.

Requests for non-development support requires the user to submit a ticket under the ENTDBA JIRA project.

## 2. DBA Request Process Flow

This diagram outlines the general process for requesting Enterprise Application DBA support.



### IMPORTANT NOTES:

- Large Non-Dev Production Sweeps must have a CM approved RFC and STP must be notified.
- The user should create an ENTDBA JIRA Ticket when extra assistance (such as recommendations and analysis) from a DBA is being requested during the process.

## 3. Process Requirements

The following list identifies the requirements for Enterprise Application DBA support.

- All Application DBA work is documented in the ENTDBA JIRA project.
- All DDL (including changes to models or database code) executed on any database requires a CMS document and use of CMS to promote it.
- All DML not included in a change request requires an ENTDBA JIRA ticket/Run ID/Audit Trail.

Refer to **APPENDIX B: DBA Support Categories** for guidance on determining which type of request to submit.

## 4. Process Steps

### 4.1. User Requires Support

When a user requires support, that support falls in one of two categories:

1. Development Support
2. Non-Development/Data Support

Based on the type of request, the project team will have an ENTDBA ticket created one of two ways.

### 4.2. User Submits Request for Support

#### 4.2.1. Development Support: User Creates CMS

The CMS Process is followed for development changes (i.e. any type of DDL).

The Data Architecture (formally Data Governance) team will review the RFC during the CMS request process.

The Project Team is responsible for identifying Enterprise Application DBA support requirements (i.e. reviewing table structures, triggers, procedures etc.) and for resolving issues that may occur throughout the process.

An ENTDBA JIRA Ticket should only be created when extra assistance (such as review, recommendations and analysis) from a DBA is being requested during the process.

Refer to section 4.4.2 Designated response times for CMS requests for DBA response times

#### 4.2.1.1. Data Model Development

Project teams may use the enterprise data modelers to produce their data models and scripts, or they can produce their own models and scripts.

- Data modelers will perform the required CMS actions to request deployment to test and model office.
- If project teams produce their own data models and scripts, they must follow all steps in the CMS promotion process.

In both cases, the followings processes need to be coordinated by the Project Team:

#### Project Team Check List for Control Data Model Development

Requirements	Description
<b>Enterprise Data Dictionary Updates</b>	The Data Architecture Team will perform enterprise data dictionary updates to SharePoint.
<b>Publish Models and Dictionaries</b>	The Data Architecture Team will publish models and dictionaries to SharePoint.
<b>CMS Promotion process</b>	The Project Team will use the normal CMS Promotion Process to stage and request DBA deployment through all regions.

#### 4.2.1.2. Database Code Development

Project teams are responsible for providing developers to write database code (triggers, procedures, packages, etc.). If a project team intends to request actual development support from the enterprise DBA group, that request must be coordinated with the Enterprise DBA team lead and Gov't Managers.

All code deployed in a database supported by the enterprise DBA group should be reviewed by an enterprise DBA.

The **ENTDBA JIRA Ticket** will be used to request the enterprise DBA support for code review. The DBA group will log any comments or issues in the ticket as necessary.

**Data Architecture** (formerly known as Data Governance) will validate that the enterprise DBA group concurs with the change as part of its change review process. If any conflicts occur, Data Architecture will work the project team to resolve the issues.

The normal **CMS Promotion Process** will be used by the Project Teams to stage and request DBA deployment through all regions.

##### 4.2.1.2.1. Type Code in Packages

ISSUE 1: In general, "TYPE" objects currently do not have a separate deployment file, and are instead prefixed within file for the package that they are related to. With this being the case, there are currently two separate objects being deployed for only one deployment file, which is not acceptable for version control. Note that currently this is only an issue for deployments involving "TYPE" objects. In all other cases, coded objects have their own deployment files.

SOLUTION 1: To be consistent with all other deployment files, involving coded objects, all "TYPE" objects need to be either

- (1) Rewritten so that they are within the body of the package that they are related to, or
- (2) Created with a separate deployment file.

ISSUE 2: Revision description ("header") is not properly placed within the deployment file, which, after the deploy, results in not having the revision description included in the database.

SOLUTION 2: For all coded objects, all revision descriptions ("headers") need to be placed within the body of the object, and preferably after the first "create... as" statement.

***\*\*\*SQL code will be checked by the DBAs prior to deployment and in cases where types do not follow these standards listed here, the deployment will be 'failed' at the CMS level and referred back to the project team for resubmission.***

#### 4.2.1.3. Control Table Data Changes

Data proponents are responsible for managing and coordinating changes to control tables. Since control data inherently affects application behavior, they must be treated as development changes. The Data Proponent must use the following procedures to submit a request:

**Data Proponent Check List for Control Table Data Change Requests**

Requirements	Description
<b>CMS Request</b>	Data Proponents must write and submit a CMS Request. Requests for the DBAs to deploy a control table should include the following information: <ul style="list-style-type: none"><li>- Detailed instructions for the DBA on how the table is supposed to be updated (e.g. copy from CTLTABS or CTLTABS2, run the attached script, load the attached data using the provided control file).</li><li>- Dependencies</li><li>- Deployment Date</li><li>- Deployment Time (regular business hours or after hours)</li><li>- Region</li></ul>
<b>Check-In Script</b>	Check control data scripts into <u>source code control</u> (e.g. Subversion (SVN)). Except for scripts containing PII or sensitive data or full table copies; these should be sent as an attachment in an email message to the DEERS DBA mailing list.
<b>CMS deployment process</b>	Follow the <u>CMS deployment process</u> to promote changes through regions. Data Proponents are responsible for managing and coordinating activities throughout the process.
<b>Send App DBA the CMS email notification</b>	To request ENTDBA support, forward the CMS-generated automated email notification to the DEERS DBA Mailing List: <a href="mailto:dodhra.beau-alex.dmdc.list.deers-dba@mail.mil">&lt;dodhra.beau-alex.dmdc.list.deers-dba@mail.mil&gt;</a> <ul style="list-style-type: none"><li>- Send the “OK” email notification</li><li>- Include “***CONTROL TABLE***” in the front of the Email Subject line to indicate the request needs DBA support.</li></ul>

Control Tables scripts can be DML scripts or text files to be loaded. If text files are used, the data proponents must provide the SQL loader control file with the data. The proponent can include the data in the control file if they prefer to provide a single file for deployment.

All control tables have staging areas **CTLTABS** (for production) and **CTLTABS2** (for Contractor Test). The data proponent must request deployment of their scripts into these staging areas using CMS. When deployment is requested to a CT or Production region, the application DBA will truncate the production table and copy the data in the staging table into the target region.

Note, the execution of a table load is typically not complete until a restart (i.e. bounce) of the applications by the Web team may be required to pick up the new table loaded. The Data Proponent should be responsible for the coordination of all tasks across teams through the end to end processes of deploying a control table. Please refer to the Change Management (CM) site to ensure additional requirements, such as a Change Request (CR), are completed in-advance.

#### 4.2.1.4. Grant and Synonym Requests

All grant and synonym requests need to go through the CMS Promotion Process, with the exception of read-only AUSR synonyms.

The AUSR synonyms are handled by DBA's outside of the CMS process since Data Modelers do not provide synonym definitions for AUSR. Requests to create a synonym in the read-only schemas (AUSR, E2R2MGRP or E2R2CGRP in CT regions) should be submitted as an ENTDBA JIRA Ticket.

#### 4.2.2. Non-Development/Data Support: User Creates ENTDBA JIRA Ticket

Non-development support, such as fixing production data quality issues and running data updates in any environment, is initiated by a project team by submitting an **ENTDBA JIRA ticket**. The project team will fill out as much of the JIRA ticket as possible to ensure the Application DBA can complete the task. If more information is required the ticket is returned to the originator with the request.

All data support requests (whether data quality fixes or operational sweeps) require an ENTDBA ticket, an Audit Trail Insert and a RUN\_ID from a vetted data quality analyst or they will not be processed. Refer to **APPENDIX A: Vetting and assignment of Run IDs to Data Analysts**

Use **APPENDIX C: ENTDBA JIRA Ticket Template** as a reference when submitting a ticket. Project Teams need to populate all required fields as shown in the template.

##### **Project Team Check List when creating an ENTDBA JIRA Ticket:**

<b>Requirements</b>	<b>Description</b>
<b>RUN_ID</b>	Each sweep needs to update the RUN_ID if it exists in the table (whether it is NOT NULL or not). The DBAs will do a desc on the table being updated to see if it has a RUN ID.
<b>Audit Table</b>	Each sweep needs to either include: 1. Inserts into an ADT table, or a 2. Statement that there is no ADT table with a corresponding audit flag. It is the responsibility of the project team to provide that insert into the Audit table (the DBAs are not expected to know which Audit table is appropriate).
<b>Data Architecture Waiver</b>	If either of these is missing, the sweep needs to have a Data Architecture (formally Data Governance) waiver, via a comment from a Data Architecture representative into the JIRA ticket.

#### 4.2.2.1. Supporting files

All files and documentation required to execute actions against any database that **DO NOT HAVE PII** data are attached to the JIRA ticket.

Files that **DO HAVE PII** data are emailed to the supporting DBA by encrypted email.

#### 4.2.2.2. Recurring Activities

For short term activities that will end in the near future (less than 2 months), create a parent JIRA ticket in the ENTDBA project. Create a sub-task for that ticket each time the activity is performed. This allows us to track DBA time spent on the activity and document any issues.

If the recurring activity is expected to last more than a few months, follow the CM development process, create a change request, and implement the code.

#### 4.2.2.3. Production Deletes

All ENTDBA requests to delete persons from production (i.e. remove all of their data) go through DGIM first. Tickets can be entered in **DGIM JIRA** and they will be routed to ENTDBA JIRA after being checked and approved.

#### 4.2.2.4. Large Non-Development Production Sweeps

Large sweeps in the production region (any update affecting more than 10,000 records) need to be treated similarly to a development change, even though they do not affect any database objects. This is required because large sweeps potentially impact performance and must be tracked by CfM. This provides visibility to IT Operations in the event of any unexpected performance impact.

All requests should be coordinated one week in advance with CfM and DBA teams.

#### Project Team Check List for Large Production Sweeps:

Requirements	Description
<b>Submit CMS RFC</b>	Project Teams must submit a CMS RFC for the sweep and get the CMS RFC # back from CM. Currently, sweep code is NOT required to be in CMS or SVN, or be promoted by CfM. CM will create a sweep item in CMS, which will add it to the Release Spreadsheet based on the release date provided in the RFC.

<b>Project team Attends STP meeting</b>	Project Teams must attend the Short Term Planning (STP) meeting the week their sweep is to be executed in order to answer any questions that may arise. If team does not attend STP meeting and concerns are raised, sweep will not be executed.
<b>Submit ENTDBA Ticket</b>	<p>Project Teams must create an ENTDBA ticket for the sweep. The ticket needs to include the following information:</p> <ul style="list-style-type: none"> <li>- Sweep script (with RUN_ID and Audit Trail),</li> <li>- Date to be executed (1 ticket per script run date)</li> <li>- CMS RFC number included in the title. Include a link to the document in the ticket description.</li> <li>- Execution instructions including DB to run script in.</li> </ul> <p>When sweeps need to be executed outside of regular work hours or require DBA support beyond simple script execution, ENTDBA ticket must be submitted <u>one week in advance</u> to provide the DBAs time to schedule DBA resources to support the sweep.</p>

NOTE: The 10,000 record threshold is a best guess at defining a limit between normal operational data support (which only requires a JIRA ticket) and support that needs to be formally managed.

Sweeps will be run during normal business hours or during maintenance windows with the appropriate amount of notice. All exceptions need approval by the government supervisor.

### 4.3. DBA Group Assigns a DBA

When an ENTDBA ticket is created, an email is sent to the assigned App DBA team JIRA Gatekeeper and Managers. The team has the gatekeeper that assigns requests to an Application DBA. All application DBA's will rotate through the gatekeeper position.

The Gatekeeper triages the ticket and assigns it to an Applications DBA. The ticket can request a specific DBA to support the work, and the gatekeeper will attempt to assign it to the DBA requested. If the requested DBA is not available, the gatekeeper will identify an alternate DBA. If no alternate is available, the ticket will remain unassigned until there is an available DBA.

It is the responsibility of the project team to follow up with the DBA application team lead, if there is a delay in getting a ticket assigned or if there is an issue with the assigned DBA.

If the government POC assigns actual development work, the same process is followed to track and comment the issue.

#### 4.3.1. Tickets that should immediately be closed by the ENTDBA Gatekeeper

Invalid Ticket Request	Resolution Comments
Unapproved Large production sweeps	Refer to Section 4.2.4 above for correct process
Items deployed through CMS	This includes any DDL item that needs to go to multiple regions,

	Control Table moves or updates, and items requesting 'back out', 'delete', or 'removal' from a region. Project Teams need to follow the normal CMS promotion process.
Requests for code to be moved to SVN	This task is handled by Data Architecture.
Errors that are actually solved by Systems DBAs	I.e. ENTDBA 1653. This could include oracle account requests (anything but AUSR select only), and application/db bounce requests.
Duplicate tickets	Project Teams should check with Data Architecture, or other Partnering Teams/Members, before creating a new request
Tickets that should have been assigned to a different division/project	If possible, MOVE the ticket to the correct project, but if that information is not available, close the ticket and state that in the comments. This includes requests for data modeling, new application site id requests, and data quality merge requests that were requested by someone not on the DQ team.
Java application errors	Database errors may be requested here but java errors must be addressed by the project team.

An appropriate response to such requests is to close the ticket as 'will not fix' and include the reason in the comments.

**\*\*\*\*NOTE: If the ticket seems out of the ordinary, do not assign it. Ask the Team Manager (Kirk Robinson) or the team to take a look.**

#### 4.3.2. Tickets that require special consideration

Ticket Request	Comments
Code Work	Code work should be referred directly to DGIM and they will assess the request and approve if necessary. (Section 4.2.2)
Work based on long project team testing or list multiple components that have to be done over a long period of time	JIRA tickets should be finite tasks that can be completed in a set time and do not depend on external project team work. These tickets should be analyzed for specific action items, and closed when those action items are completed. They should NOT remain open for weeks while project teams do other work behind the scenes. Any further tasks can be requested in a new task or sub-task.
Deletes in Production	Tickets requesting deletes in production – that were not generated by the Data Quality Team or DGIM group –must be sent to DGIM for review.

#### 4.4. DBA Performs Work

The Applications DBA performs required work as indicated in the JIRA ticket assigned to them. Although, email communication between the DBA and the customer is expected, all tasking and changes are documented in the JIRA ticket comments.

#### 4.4.1. DBA Availability

Application DBAs are available during regular business hours of 0600 PST to 1700 PST. All non-emergency JIRA tasks that need to be executed outside of available business hours are subject to DBA availability during that time.

Deployment Region	DBA Scheduled Availability
Production	Regular Saturday maintenance period
Contractor Test	Tuesday and Thursday evenings at 0630 PST
Test & Model Office	Regular business hours of 0600 PST to 1700 PST

#### \*\*\*What constitutes an 'emergency' requiring after hours work?

An 'Emergency' is any situation that causes a production outage and should be reported as an SRT (major incident). All other situations are taken care of during regular business hours.

#### 4.4.2. Designated response times for CMS requests

The designated response times for CMS Tickets are as followed:

PRIORITY	RESPONSE TIME
Production	Will be deployed per CMS production schedule
CT/Stress	Will be deployed per CMS production schedule
Model Office	2 Business Days
Test	2 Business Days

Note: Refer to the CM Maintenance Window document for deployment schedule.

#### 4.4.3. Designated response times for JIRA tickets

The designated response times for JIRA Tickets are as followed:

PRIORITY	RESPONSE TIME
Blocker	4 Hours (request will be assigned immediately during regular business hours)
Critical	1 Business Day
Major	2 Business Days
Minor	3 Business Days
Trivial	5 Business Days

Note: A business day is considered 8 hours during the regular working hours. JIRA Tickets submitted later in the day will have the remaining business hours rollover to the next day. JIRA tickets submitted after business hours will get assigned to a DBA on the following business day. Urgent issues after hours should be handled through an SRT.

#### **4.5. Resolve and Close Ticket**

After the Application DBA performs all the required work and ensures all ticket fields are filled out as much as possible and all actions are documented in the “Comment” field then they click the ticket “Resolve Issue” button. If “Resolve Issue” is not available, simply comment the ticket indicating it can be closed. The enterprise DBA team lead will monitor the JIRA project and close the ticket as required.

NOTE: Tickets can be closed after a period of inactivity. Comment requesting status on tickets that have not had any activity for over one week. If the customer does not respond by the same day next week, close the ticket and indicate that they can request to reopen if necessary.

#### **5. Review**

The Application DBA team lead will review all open tickets weekly to ensure there are no outstanding requirements, or tickets that were not closed when requested.

## **APPENDIX A: Vetting and assignment of Run IDs to Data Analysts**

Every request to update/insert/delete production data must include the analyst's RUN\_ID as issued by the Data Architecture (formerly the Data Governance) team. The requestor must include their RUN\_ID in the ENTDBA ticket. If there is no RUN\_ID provided, the DBAs should not execute the scripts. Additionally, the DML statements need to ensure that the affected record(s) are tagged with that RUN\_ID unless an exception is granted by the Data Architecture team.

\*Note: the owner of the RUN\_ID is the person who is taking ownership / responsibility for the data changes and must be the person who submits the ENTDBA ticket.

All code to sweep / update / change production data must also create Audit rows that include the analyst's RUN\_ID (e.g. insert to PNADT, BNFADT, etc.), unless there isn't a relevant audit table for the data being changed. Audit rows are not generated via trigger and must be part of the DML logic.

\*Note: In addition to auditing changes to DMDC data, PNADT/BNFADT inserts trigger updates to the DB Extract on the mainframe via the DELTX table. If no PNADT rows are inserted, the DB Extract will be left out of sync.

To verify a Run ID is valid and active the ENTDBA shall execute the DG supplied query “DQ-ID\_Verify.sql” as “E2R2@AERP”.

Use the Data Architecture / Data Governance process to request a Run ID located at:  
<http://teamsites.ds.dhra.osd.mil/teams/es/datagov/processes/SitePages/Home.aspx>

Contact the Data Architecture team if you have any questions.

## APPENDIX B: DBA Support Categories

Work Type	DBA Action	Project Team Submits
Non-Dev/Data Support	Research Requests	ENTDBA JIRA, script
	One off queries	
	Large/Complex queries	
	Data Correction (Data Quality Issues)	ENTDBA JIRA, Run ID/Audit Trail, Script
	Data Correction (Operational Sweeps)	
Development Support	Data Correction (Large)	Refer to <b><u>Error! Reference source not found. Error! Reference source not found.</u></b>
	Development Sweeps	CMS Request / Promotion Process
	Development (Triggers, Procedures, etc.)	
	Data Model Changes	
	Control Data Changes	

### REQUESTS FOR DATA SUPPORT

**Research Requests** – Requests for DBA’s to research a database error, check/add tablespace, etc.

**One Off Queries** – Simple read only queries that take minutes for a DBA to run require a JIRA ticket.

**Large/Complex Queries** – Queries taking more than minutes of DBA effort require an ENTDBA ticket.

**Data Correction (Data Quality Issue)** – Simple sweeps to fix bad data in production.

**Data Correction (Operational sweep)** – Simple sweeps to change/insert production data for non-data quality reasons. For example, adding a site to a site table.

### REQUESTS TO DO DEVELOPMENT

**Development Sweep** – A sweep that depends on a data model or database code change or that is required by a data model or database code change. Development sweeps are inherently tied to other development (tables, packages, etc.), must be included the same CMS word document, and promoted with that corresponding DDL using the CMS deployment process.

**Data Correction (Anything large)** – Any data correction affecting over 10,000 rows MUST submit a CMS request and follow the CMS deployment lifecycle. Multiple IT Operation teams need to know about heavy database activity. This MUST be tracked by CM using CMS.

**Trigger/Procedure Development** – Requests to build database code objects (triggers, packages, etc.). Use the normal CM development process.

**Data Model Changes** – Modification of static objects (tables, indexes, etc.). Data Architecture assigns modelers to produce scripts and initiate CMS deployment workflow after reviewing the CMS document.

**Control Data Changes** – Modifications to control data used by applications to control their processing. Data proponents use the normal CM development process.

## APPENDIX C: ENTDBA JIRA Ticket Template

ENTDBA JIRA Link: <http://jira.int.dmdc.osd.mil:8888/browse/ENTDBA>

The Project Teams need to populate the following fields requirements when submitting a ticket:

JIRA FIELD	ENTDBA REQUIREMENT
PROJECT	EnterpriseDBA (ENTDBA)
ISSUE TYPE	Task (Note: other types can be selected, but usually not applicable)
SUMMARY	<ul style="list-style-type: none"> <li>- Related Ticket Number (CMS or Incident #, if applicable)</li> <li>- REGION (PROD, CLAB, STRESS, CT, MO, TEST),</li> <li>- ISSUE/ACTION NEEDED (Sweep, Research, Update, Insert, etc.),</li> <li>- IMPACTED AREA/SUBJECT (Table Name, Issue, Customer, etc.)</li> </ul>
PRIORITY	PRIORITY & RESPONSE TIME (listed in the section “DBA Performs Work”) <ul style="list-style-type: none"> <li>- Blocker 4 Hours (request will be assigned immediately)</li> <li>- Critical 1 Business Day</li> <li>- Major 2 Business Days</li> <li>- Minor 3 Business Days</li> <li>- Trivial 5 Business Days</li> </ul>
COMPONENTS	Enter one of the following Standardized Task Type: <i>Database Task, Database Update, Database Research, Database Configuration, Data Quality Update, Database Error check, Database Sizing, Database Query Assistance, Coding, Documentation, Reports, Replication</i>
LABELS	Supporting <u>PROJECT NAME</u> (NOTE: PDR is not a project, Database is not a project)
DESCRIPTION	Refer to the sections above to determine the information required for each request type
ATTACHMENTS	Supporting files: All files and documentation required to execute actions against any database that DO NOT HAVE PII data are attached to the JIRA ticket. Files that <u>DO HAVE PII data are emailed</u> to the supporting DBA by encrypted email.

The Project Teams are highly recommended to populate the following field options when submitting a ticket:

JIRA FIELD	ENTDBA REQUIREMENT
FOUND BY	None, unless group is listed in drop down list
REGION	Select Region from drop down list. (IMPORTANT: 1 ticket per issue and per region) <i>PROD, CLPROD, DR, STRESS, CTD2, CTD1, CTS, CTG, MO1, MO2, TEST1, TEST2</i>
REQUESTOR	Name, Organization, Contact Info, etc.
DUE DATE	Add date for large support request submitted with 1 day to 1 week of advanced notice

## APPENDIX D: Types of SQL Statements

*Red Text = Common DMDC commands*

Abbr	Statement Type	Definition	Commands	NOTES
DML	Data Manipulation Language	Used to retrieve, store, modify, delete, insert and update data in database	INSERT UPDATE DELETE SELECT EXPLAIN PLAN LOCK TABLE MERGE CALL	INSERT, UPDATE, & DELETE (DG only) – Create JIRA Ticket for APP (refer to DBA SOP)  Users with oracle access can SELECT (query) w/o DBA assistance.
TCL	Transactional Control	Manage changes made by DML statements	COMMIT ROLLBACK SAVEPOINT SET TRANSACTION	Included in DML statements
DDL	Data Definition Language	Used to create and modify the structure of database objects in database. Tasks performed: - Create, alter, and drop schema objects - Grant and revoke privileges and roles* - Analyze information on a table, index, or cluster - Establish auditing options - Add comments to the data dictionary	CREATE ALTER DROP FLASHBACK GRANT* REVOKE* TRUNCATE ANALYZE COMMENT ASSOCIATE STATISTICS AUDIT NOAUDIT DISASSOCIATE STATISTICS PURGE RENAME UNDROP	All DDL's need to be handled through CMS
DCL	Data Control	Used to create roles, permissions, and referential integrity as well it is used to control access to database by securing it. *Commands are also referred in DDL list	GRANT REVOKE	DCL's are also DDL's; All DDL's need to be handled through CMS
	System Control	Dynamically manage the properties of a user session	ALTER SESSION SET ROLE	

## APPENDIX E: Application DBA vs. System DBA

Generic description of common differences between Application DBA's and System DBA's.

### Application (Project) DBA – Developed Database Artifacts (Data & Data Repositories)

Provide support and oversight over DMDC developed database artifacts. Work closely with multiple groups including but not limited to developers, stakeholders, and operational support groups (Systems, Production Support, Configuration-Change Management) in support of DMDC data and data repositories. Task Examples:

- Implement and maintain the database design
- Create database objects (tables, indexes, etc.)
- Maintain database procedures, functions and triggers
- Assist developers with database activities
- Tune database queries
- Monitor application related jobs and data replication activities

### System DBA – Database Infrastructure

IMPORTANT: REFER TO THE DMDC SYSTEM DBA SITE FOR THE ACTUAL LIST OF TASKS AND SYSTEMS USED TO REQUEST SUPPORT. THE INFORMATION BELOW IS A GENERIC DESCRIPTION OF SYSTEM DBA TASKS.

Provide support and oversight of the DMDC database infrastructure, including but not limited to the COTS database products. Generic Task Examples:

- Install and Maintain Database Software
- JAVA Patching
- Provide Oracle Database Configuration Changes
- Provide Oracle Network Encryption Requirements
- Create and Maintain Databases
- Setup and configure DataGuard databases
- Setup and configure RAC instances

### DBA Support Request Systems

The following table outlines tools used to request support per DBA group.

DMDC Application	Tool Use	Target DBA Group	Comments
Change Gear (As of 3/23/2018)	Systems Change Order, Request, Incident	Systems DBA	Infrastructure changes, incident and problem management. (Note: Tool previously used was CA Service Desk)
CMS (Change Management System)	DMDC developed software requests for change, deployment, release scheduling	Application DBA	Used in support of development work.
JIRA	Software for bug tracking, projects, tasking	Application DBA	Used in support of non-development App DBA requests. (Note: may eventually change to Change Gear)